

1 WE CLAIM:

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3 1. The method of providing for a fluid
4 treatment, that includes

5 a) providing a treatment zone containing
6 granular activated charcoal, and

7 b) providing a stream of water containing
8 nutrients, contaminant degrading microbes and dissolved
9 oxygen, and

10 c) introducing said stream to said
11 treatment zone to effect adsorption of said nutrients
12 and microbes onto the granular activated charcoal,
13 thereby to provide a contaminant treatment matrix,
14 whereby contaminant in fluid flow through the matrix is
15 reduced.

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18 2. The method of claim 1 wherein the
19 granular activated charcoal in said zone has one of the
20 following forms:

21 i) pellets

22 ii) a mat or mats

23 iii) fabric

24 iv) a support matrix

25 v) adsorption media.

1 3. The method of claim 1 including passing
2 treatable aqueous fluid into contact with said
3 substances, in a treatment path, and recovering treated
4 fluid from said path.

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7 4. The method of claim 1 wherein said
8 granular activated charcoal is disposed as a porous
9 support media for said nutrients and microbes.

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12 5. The method of claim 3 including
13 adjusting the pH of the fluid to between 6.0 and 8.5
14 prior to said introducing step.

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17 6. The method of claim 5 including
18 adjusting the temperature of said fluid to a level less
19 than 110°F, prior to said introducing step.

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22 7. The method of claim 1 including
23 adjusting the temperature of said fluid to a level less
24 than 110°F, prior to said introducing step.

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1 8. The method of claim 1 including
2 introducing O₂ to said treatment zone.

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5 9. The method of claim 1 including aerating
6 said treatment zone.

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9 10. The method of claim 1 including
10 providing a series of said treatment zones, and a
11 seeding zone upstream of said treatment zones, and from
12 which microbes are supplied in fluid flow to the
13 treatment zones, for adsorption on the granular
14 activated charcoal therein.

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17 11. The method of claim 1 including passing
18 waste water containing toxic contaminants through said
19 matrix, to reduce said contaminants.

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22 12. The method of claim 1 including passing
23 gas transported toxic through said matrix, to reduce
24 said contamination.

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